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Description of the female of *Eulamprotes gemerensis* Elsner, 2013 (Lepidoptera, Gelechiidae)

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Abstract. The female of *Eulamprotes gemerensis* Elsner, 2013 is described and illustrated with colour photographs of the adult, exuviae, as well as the figures of female genitalia, tree of COI barcodes, its habitat and distribution map. The female was reared from a pupa found in moss on a stone in the Slovak Paradise National Park in Eastern Slovakia. The species is sexually dimorphic, with female having a reduced hindwing.

Introduction

Eulamprotes gemerensis Elsner, 2013 was described by Elsner (in Huemer et al. 2013) from material collected in the Muránska Planina National Park and the Slovak Karst National Park in Central and Eastern Slovakia. The description was based only on males. *E. gemerensis* belongs to gelechiids of the *Eulamprotes wilkella* (Linnaeus, 1758) group with whitish and or silvery or golden forewing markings according to a revision of the Palaearctic species of the group (Huemer et al. 2013). Until now, the female was unknown.

In early May 2016, I carried out a faunistic study in the Slovak Paradise National Park in Eastern Slovakia, near the village of Vernár, searching for larvae of some psychids on rocks. In addition to cases of *Brevantennia ilonae* Weidlich, 2014, *Eosolenobia mannii* (Zeller, 1852) (Psychidae), and *Coleophora nubivagella* Zeller, 1849 (Coleophoridae), I gathered a few pieces of moss from the rocks. Surprisingly, a month later, one gelechiid female with reduced hindwings emerged from the moss material. I established that it represented the unknown female of *E. gemerensis*, which is here described and compared with other closely related females of the group.

Abbreviations

Gp	genitalia preparation
NNR	National nature reserve
NP	National park
TLMF	Tiroler Landesmuseum Ferdinandeum, Innsbruck, Austria
ZT	Zdenko Tokár

Taxonomy

Eulamprotes gemerensis Elsner, 2013

Material. ♀, NP Slovenský Raj (Slovak Paradise), Vernár 1 km SE, 760 m, 48°93.22'N; 20°28.59'E, pupa 6.v.2016, ex pupa 2.vi.2016, Gp ZT 12877, Z. Tokár leg., det. & coll.

Description of female. Adult (Fig. 1). Wingspan 9.5 mm. Second segment of labial palpus black with yellowish grey apical area. Third segment of equal length to the second, yellowish grey dorsally and black ventrally. Basal half of antenna black, apical part greyish white with first four segments of this part ringed black. Head, thorax and tegulae black. Frons light, bright yellow. Forewing narrower than in male, lanceolate, black with silvery white shiny markings. Oblique costal spot from 1/6 of forewing reaching fold; broken fascia in a form of several separate spots, from middle of costa to two-thirds towards dorsum; pre-apical costal spot angled towards termen; tornal spot in 5/6 of dorsum; termen with several silvery white scales of different sizes. Cilia black to blackish grey, whitish grey at tip of apex. Hindwing grey, lanceolate, reduced as compared to that of male, about three-quarters the length of forewing and at base one-third as broad as forewing, tapering to pointed apex. Abdomen distinctly larger than in male, dark brownish black; posterior part of each segment with silvery white scales.

Female genitalia (Fig. 2). Apophysis posterioris about 1.2 times as long as apophysis anterioris, both pairs slender, rod-shaped. Segment VIII with sclerotized posterolateral part, otherwise membranous. Ostium bursae without obvious sclerotized folds. Ductus bursae long and slender, about 3 times longer than apophysis anterioris. Oblong sclerite in posterior half of ductus bursae beyond tip of apophysis anterioris. Membranous part of ductus bursae about 1.6 times as long as sclerotized part, gradually expanded towards corpus bursae. Corpus bursae suboval, slightly longer than segment VIII. Signum a large subrectangular plate, posterior margin with two short spines, anterior margin with two spines, one short and one longer.

Diagnosis. A diagnostic comparison between the female of *E. gemerensis* and other females of the *E. wilkella*-group cannot be complete because females are currently known for only seven of the twelve Palaearctic species of this group (Huemer et al. 2013). The female of *E. gemerensis* has reduced hindwings that are three-quarters of the length of the forewing, whereas the females of *E. wilkella*, *E. ochricapilla* (Rebel, 1903) and *E. superbella* (Zeller, 1839) have almost normal hindwings. According to Huemer et al. (2013), however, hindwings of the female of *E. libertinella* (Zeller, 1872) are very short, no longer than the breadth of the forewings. Hindwings of females of *E. mirusella* Huemer & Karsholt, 2013 and *E. occidentella* Huemer & Karsholt, 2011 are both shorter than those of *E. gemerensis*, about two-thirds of the length of their forewings. Externally *E. gemerensis* also differs from those of the aforementioned species by having head, thorax, and tegulae black, and frons light bright-yellow. The female genitalia of *E. gemerensis* differ from those of other known females in the long membranous part of the ductus bursae, which is about 1.6 times as long as the sclerotized part.

Molecular data (Fig. 3). Legs of the female of *E. gemerensis* were sent for DNA analysis (sample TLMF Lep 20508). The sequenced COI barcode region from this specimen was compared with those of three males of the species. The other sequences are from BOLD (Barcode of Life Database; Ratnasingham and Hebert 2007). A tree was made using neighbour-joining (Kimura 2 parameter). It was confirmed that the female belongs to this species.

Figure 1. *Eulamprotes gemerensis*, female.

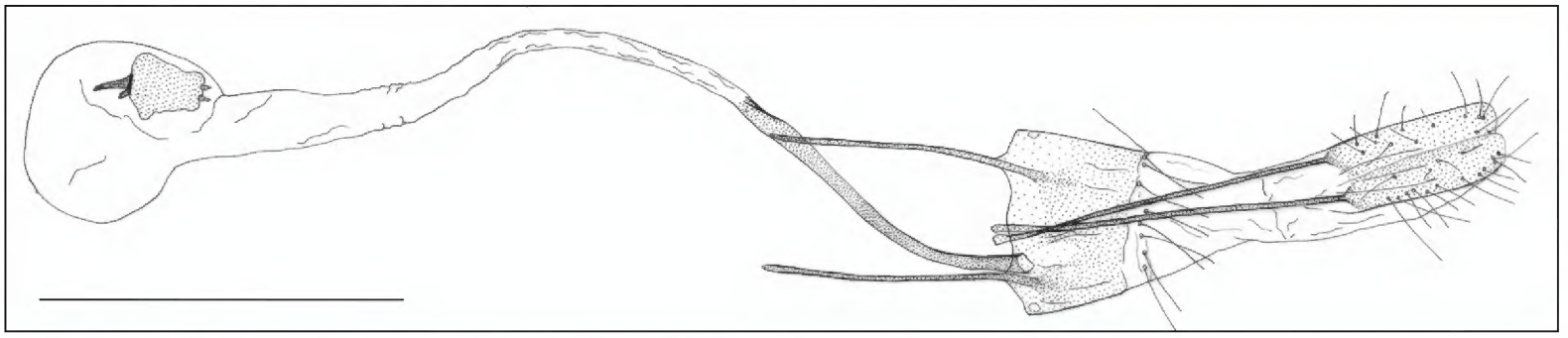

Figure 2. *Eulamprotes gemerensis*, ♀ genitalia, Gp ZT 12877. Scale bar 1.0 mm.

E. gemerensis|TLMF Lep 20508|658bp|Slovensky raj Vernarska tiesnava
E. gemerensis|TLMF Lep 05168|633bp|NP Slovensky kras PR Dulova
E. gemerensis|TLMF Lep 05167|658bp|NP Slovensky kras PR Dulova
E. gemerensis|TLMF Lep 05169|658bp|Muran-hrad
0.001 = 0.1%

Figure 3. A neighbour-joining tree of four barcoded specimens of *Eulamprotes gemerensis* with a scale bar showing genetic distance between sequences.

Distribution (Fig. 6). Hitherto *Eulamprotes gemerensis* has been known from the Slovak region of Gemer, the Muránska Planina NP, and the Slovak Karst NP. The female was found in another Slovak national park, the Slovak Paradise NP, near the Vernárska Tiesňava NNR at an altitude of about 760 m. During 2016, a local population of the species was observed in the same NP eastwards, near the Ihrík Ridge (Endel, pers. comm.).

Biology. The female specimen was reared from a pupa found in moss growing on a stone in early May (Figs 4, 5). According to Huemer et al. (2013), the available data point towards moss

Figures 4–5. 4. The place where the pupa of *Eulamprotes gemerensis* was obtained. **5.** Remains of exuviae in the moss.

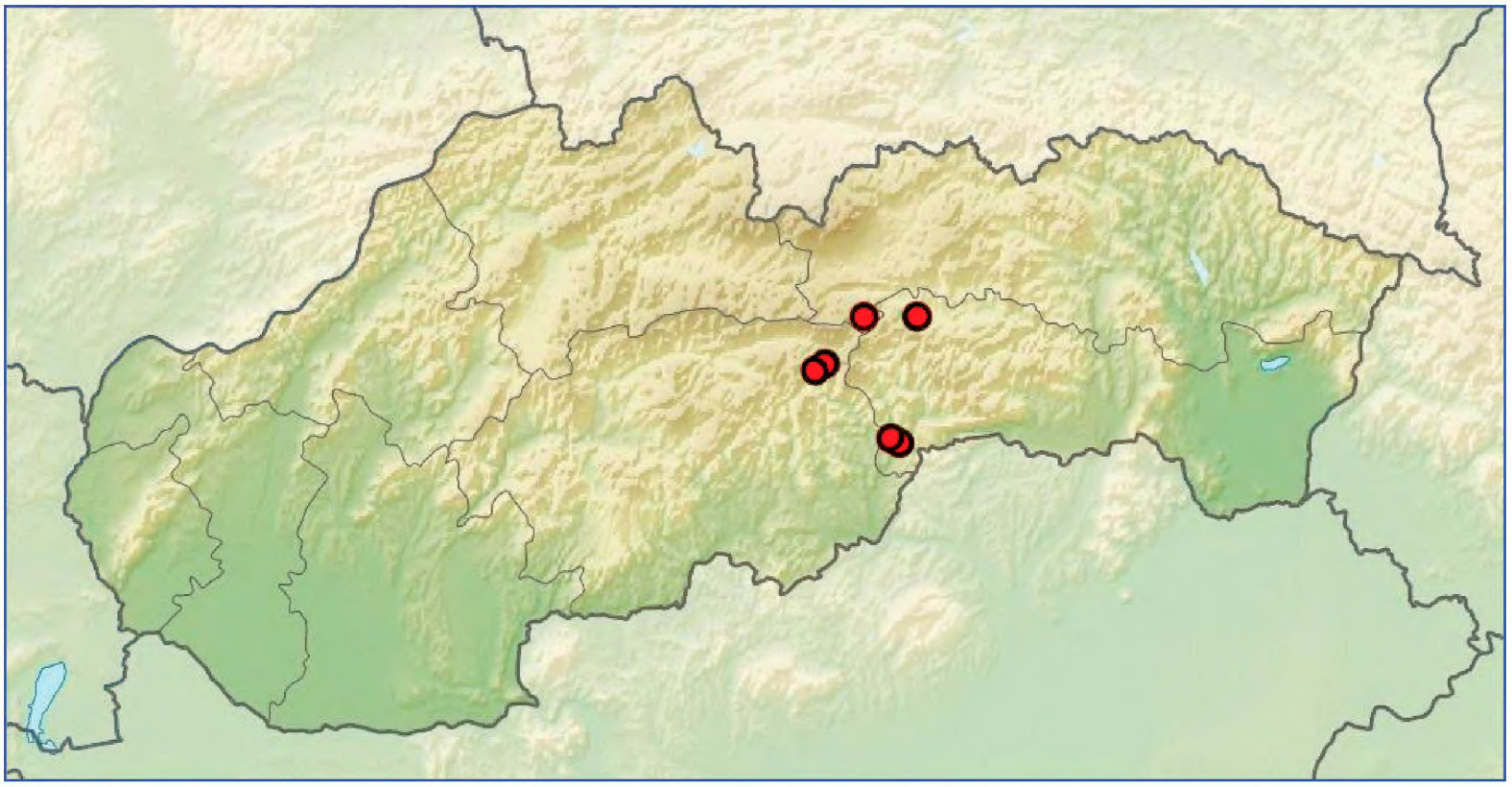

Figure 6. Map of distribution of *Eulamprotes gemerensis* in Slovakia.

being the primary food substrate of species in the *E. wilkella*-group. *Eulamprotes gemerensis* occurs on xerothermic limestone slopes and the flight period is between late May and early August. Male adults are attracted to light but can be also found flying over vegetation near rocks during early daylight hours. All records known to date are from the Slovak karst areas, from altitudes of about 500 to 1050 m.

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